

## **Response of bone to whole body vibration in children with acute lymphoblastic leukemia**

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**Abstract : Objectives:** The objective of this study was to evaluate the effect of whole body vibration (WBV) on bone mineral density (BMD) in children with acute lymphoblastic leukemia. **Methods:** Forty children with acute lymphoblastic leukemia in the maintenance phase participated in this study with age range 10 to 14 years. They were randomly allocated into either study or control groups, study group received WBV training for 20 weeks, 5 times/week, every session composed of 10 repetitions (30-60 sec) and 1 min rest, peak to peak displacement 2mm and frequency of 30 HZ plus traditional physiotherapy program. Control group received the traditional physiotherapy program only. The outcome measure was BMD, which was assessed by dual-energy X ray absorptiometry. **Result:** Children in WBV group showed a significant increase in BMD of L1-L4 and proximal femur compared with that of the control group post treatment ( $p > 0.05$ ). Both groups showed a significant increase in BMD post treatment compared with that of the pre-treatment ( $p > 0.001$ ). **Conclusion:** Adding WBV to the treatment program is an effective modality in improving BMD in children with ALL.

**Keywords :** Acute Lymphoblastic Leukemia, Whole Body Vibration, Bone Mineral Density, Osteoporosis.

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